

Advanced Study Program Seminar

Wednesday October 21st 2009 at 11 a.m.
Mesa Laboratory, Main Seminar Room
Tea and coffee served before the seminar

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20th and 21st Century Climate Change: Computer Modeling, Societal Impacts, and Environmental Justice

Abstract:

Everyone knows that climate has always changed. The most recent Intergovernmental Panel on Climate Change (IPCC) assessment report has convinced most climate scientists that humankind is changing the earth's climate and that significant global warming is taking place. For this scientific assessment the IPCC recently shared the Nobel Peace Prize with Al Gore.

Some scientists are skeptical of the IPCC view and think the observed changes result from natural climate variability or other causes. A brief review of recently observed 20th century climate change will be presented and compared with climate model simulations. These computer simulations are extended into the 21st century and beyond. A brief description of what is in climate models will be given with an emphasis on the physical mechanisms. If the world decides to shift from a fossil fuel based energy strategy to increased conservation, renewables, and possibly nuclear, we can show computer simulations of the future climate change from such a low carbon emission scenario. Finally, at the end there will be a discussion of the scientific uncertainties and societal impacts along with an analysis of policy options including possible geoengineering the climate system. The issue of environmental justice will also be addressed.

Biographical information:

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